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EXAMINER	
LISH, PETER J	

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/802,707
Filing Date: March 08, 2001
Appellant(s): ROEMMLER, MIKE G.

MAILED
NOV 16 2004
GROUP 1700

William T. Babbitt
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 17 May 2004.

(1) ***Real Party in Interest***

A statement identifying the real party in interest is contained in the brief.

(2) ***Related Appeals and Interferences***

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) ***Status of Claims***

The statement of the status of the claims contained in the brief is correct.

(4) ***Status of Amendments After Final***

No amendment after final has been filed.

(5) ***Summary of Invention***

The summary of invention contained in the brief is correct.

(6) ***Issues***

The appellant's statement of the issues in the brief is substantially correct. The changes are as follows: Applicant's raise an additional issue, which was not listed.

D. Whether Claims 12 and 22 are unpatentable under 35 U.S.C. § 103(a) as being obvious over Greinke in view of Junttila.

(7) Grouping of Claims

Appellant's brief includes a statement that claims 1-27 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

5,582,811	GREINKE et al.	12-1996
5,505,929	MATSUMOTO et al.	05-1995
4,533,086	JUNTTILA	08-1985

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-11, 13-21, and 23-27 are rejected under 35 U.S.C. 102 as anticipated by or, in the alternative, under 35 U.S.C. 103 as obvious over Greinke et al. This rejection is set forth in a prior Office Action, mailed on 11 December 2003.

Claims 1-11, 13-21, and 23-27 are rejected under 35 U.S.C. 103 as obvious over Greinke et al. in view of Matsumoto et al. This rejection is set forth in a prior Office Action, mailed on 11 December 2003.

Claims 12 and 22 are rejected under 35 U.S.C. 103 as obvious over Greinke et al. in view of Junttila. This rejection is set forth in a prior Office Action, mailed on 11 December 2003.

Claims 12 and 22 are rejected under 35 U.S.C. 103 as obvious over Greinke et al. in view of Matsumoto et al. and further in view of Junttila. This rejection is set forth in a prior Office Action, mailed on 11 December 2003.

(11) Response to Argument

Section B

Applicants argue that an upper limit to the heat treatment step of Greinke exists, the upper limit being the fracturing temperature of the stabilizing functional group, which is taught to be 1000 °C. Applicant cites column 5, lines 38-47 of Greinke in support of this argument. In response, the examiner points out that the paragraph of Greinke that the applicant relies upon is with reference to an additional second heat treatment step as opposed to the initial heat treatment step that is relied upon by the examiner. See column 5, lines 31-37 (immediately preceding the paragraph relied upon by the applicant), which states "two circumstances require a second heat treatment in order to produce a suitable blister free flexible graphite. (a) When the first heat treatment and stabilization reaction occurs with the starting graphite flake or (b) When the first

heat treatment occurs after exfoliation and the subsequent stabilization reaction involves using an acidic reagent, such as hydrochloric acid-nitric acid." Therefore, when a second heat treatment is required (when one of these circumstances is met), it should be performed between 600 and 1000 °C. This, however, says nothing toward the initial heat treatment of the graphite.

Rather, as stated in the previous office action, the initial heat treatment step of Greinke is performed at a temperature greater than 600 °C, preferably greater than 800 °C. No upper limit is placed on this heat treatment. Examples 10 and 11 show the heat treatment being performed at temperatures as high as 1200 °C and 1700 °C respectively. Example 11 yields a product that is blister free after one year and thereby meets the goal of Greinke. Example 10 yields a product that blisters after 90 days, however, it is noted by Greinke that this is due to the lack of the second part of the treatment, exposing the graphite to a stabilizing reagent, and is not a result of the high temperature heat treatment.

It is therefore maintained that the teaching of Greinke et al. encompasses heat treatment at a temperature of 1750 °C or above. It is also maintained that it would have been obvious to one of ordinary skill at the time of invention to use a temperature of 1750 °C or above for the heat treatment of Greinke, as performing the heat treatment at temperatures within the claimed range to achieve the same effect would have been envisioned by one of ordinary skill.

Section C

Applicants argue that Greinke fails to teach a step of compacting or grinding the graphite material following the purification treatment. In response examiner points to column 4, lines 15-24, "the exfoliated graphite may then be compressed into flexible graphite sheet or foil... it

should be noted that it is conventional to roll and compress the exfoliated worms in stages". Additionally, the examiner points to column 4, lines 32-35, "The two chemical reactions of the present invention can occur separately or simultaneously and can be integrated into the foil fabricating procedure or applied subsequent to the manufacture of the foil". It is therefore maintained that the step of compressing, or compacting, the graphite is taught by Greinke to occur either before or after the purification reactions.

Section D

Applicant argue that Greinke does not teach a step of grinding the graphite product after the purification process and additionally that Junttila does not teach the steps of exfoliating and purifying the graphite material prior to grinding. Examiner accepts these arguments, however, the examiner maintains the rejection that it would have been obvious to one of ordinary skill at the time of invention to grind the graphite product of Greinke using the process of Junttila. Greinke teaches that the graphite product, after heat treatment and compression into a foil, is particularly useful for high temperature applications due to its anisotropy and heat insulating properties (see column 1, lines 27-30). Junttila teaches that in order for graphite to be suitable for many applications, it must be ground to fine particles (see column 1, line 60 to column 2, line 2). Therefore it would have been obvious to grind the graphite material of Greinke in order to make it suitable for a variety of applications.

Section E

Applicants argue that the method of Matsumoto involves a the purification of graphite material but does not describe the purification of expanded graphite material and that in order for the references to be combined, there must be a recognition that the purification of Matsumoto has a relation to the purification of Greinke. In response to this argument, the examiner notes that the purification process of Matsumoto takes place under the same conditions (pressure, temperature, reactive gas flow) to that of Greinke, the reaction thereby takes place under the same mechanism as that of Greinke, and the purifying effect is the same as that of Greinke. It therefore would have been obvious to one of ordinary skill at the time of invention that the purification of Matsumoto has a relation to the purification of Greinke.

Applicant argues that the examiner is taking a temperature range and heating step that occurs in the middle of a sequential heating and cooling process, which involves numerous additional steps, and substituting it for the single-stage heat treatment of Greinke. This is not the case. Rather, The additional steps of Matsumoto cited by the applicant are drawn toward the process of graphitizing the material prior to purification. This graphitizing process has nothing to do with either the purification process of Matsumoto or that of Greinke. Therefore, the combination of references would not require this step, because the material of Greinke is already graphite and therefore does not need, nor benefit from, a step of graphitizing. Therefore, the combination of references would not destroy the intended purpose of Greinke because the combination of references would not require the additional exposure to temperatures of 800-1000 °C, required for graphitization, prior to the step of purification.

Furthermore, examiner points out that Greinke does not teach that the entire heating take place for a maximum of 20 seconds, as argued by the applicant. Rather the cited paragraph states, "when the heat treatment temperature is above 900 °C, heat treatment should be from 20 seconds to not less than 5 seconds *at the highest temperature*". This is further backed by the examples that teach the material is "*slowly heated* up to 1700 °C", as heating up to such a high temperature in 5-20 seconds is surely not considered to be "slowly heating". Therefore, it is expected that the material of Greinke is exposed to temperatures between 600-1000 °C during the purification, as it is slowly heated to the maximum treatment temperature. It is thus not seen how additional heating at these temperatures before being heated at the highest purification temperature teaches away from or destroys the purification process of Greinke. It is additionally not seen how this heating represents a "second heat treatment" as argued by the applicant.

It is therefore maintained that it would have been obvious to one of ordinary skill at the time of invention to use the purification conditions taught by Matsumoto, i.e. higher temperatures, in the purification step of Greinke et al. as it is seen to achieve the desired effect and is taught by Matsumoto to improve the purification.

Section F

See the response to arguments filed in sections C and E.

Section G

See the response to arguments filed in sections D and E.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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Peter J Lish
November 15, 2004

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